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FLEISCHER, MARK A				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

10/748,730

**Applicant(s)**

WILSON, THOMAS W.

**Examiner**

MARK A. FLEISCHER

**Art Unit**

4143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☒ Claim(s) 2, 14 is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### Status of Claims

1. This action is in reply to the application filed on 25 October 2003.
2. Claim 1-23 are currently pending and have been examined.

### Drawings

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.
4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:
  - on the following pages (P) and lines (L) ([p:L]): [8:10], [9:15], [11:3,7,21], [12:1], [13:2] reference is made to *system software 104*;
5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

**Specification**

6. The disclosure is objected to because of the following informalities: This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required. The abstract appears to incorporate PCT application information, yet the Applicant is not properly claiming any benefit of the dates cited in the incorrect abstract. Applicant is reminded of the proper **form and content** of an abstract of the disclosure. A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative. The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.
7. Where applicable, the abstract should include the following:
- a) if a machine or apparatus, its organization and operation;
  - b) if an article, its method of making;
  - c) if a chemical compound, its identity and use;
  - d) if a mixture, its ingredients;
  - e) if a process, the steps.
8. Extensive mechanical and design details of apparatus should not be given.
9. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The abstract of the instant application contains a number of terms, *e.g.*, *UOA-ID* which are presented as examples of *a unique unit of analysis* are not commonly known and are not identified. The text is confusing and unclear and should be re-written in accordance with these guidelines.

10. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are the following where the notation ((P:L)) indicates the following pages (P) and lines (L) of the specification, respectively:

- [1:8]: The text describes *a method and system ... for allocating resources over time as experienced...* (emphasis added) does not make sense and is confusing as to what is being 'experienced' and who or what entity is experiencing something.
- [1:19]: In the middle of the paragraph, the text *avail themselves to statistical* should read *avail themselves of statistical...* The rest of the paragraph regarding *profiles in defined populations* is vague and confusing as it does not describe what is meant by the term *profiles*.
- [3:11]: The phrase *makes it eligible for a defined population* is vague and confusing. The text suggests that the 'individual unit' is eligible, but it is very unclear what it is eligible for. Moreover, the grammar and sentence structure make this sentence confusing. Examiner believes Applicant means to suggest something relating to *membership criteria*.
- [3:17]: *...usable estimates of resource allocation* should read *usable estimates for resource allocation decisions...*
- [4:8]: This single sentence paragraph contains grammatical errors: *from expressed in Cohort time...* should read *from being expressed in Cohort time*.
- [10:7]: The definition of terms is important. Applicant fails to provide the requisite clarity or grammatically proper definitions. For example, the sentence defining the term *Type* in the sentence beginning with *As used herein...* is an incomplete and confusing sentence.
- [10:13]: The definition of the term *Population* is circular and therefore vague and confusing.

Art Unit: 4143

[12:5-17]: The explanation of "Grouper" and the incorrect grammar in lines 7-8 are confusing.

Appropriate correction is required.

#### ***Claim Objections***

11. Claim 2 is objected to because of the following informalities: the phrase *Output Expressions from expressed...* is grammatically incorrect. Examiner believes it should read *Output Expressions expressed...* or, in the alternative, *Output Expressions from being expressed...* Appropriate correction is required.
12. Claim 14 is further objected to because of the following informalities: the phrase *...and calculating an O per...* Examiner believes this is a typographical error that should read *and calculating an Output per...*

#### ***Claim Rejections - 35 USC § 112***

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 1, 14, 16 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1, 16, and 31 recite the limitation *identifying a Start Time* and further refer to this *start time*, but it is unclear whether this *start time* refers to the beginning of the inclusion of a *UOA-ID* into a *Type*. Both the disclosure and claims do not sufficiently clarify what this step involves. Applicant attempts to define the term on page 12, line 1 wherein "...*identify a "Start Time" which is the earliest CCT for each specific UOA-ID per Type...*" and again on page 13, line 19 wherein "*As used herein "Cohort Time" means that the Start Time is based on a defining event, which is the last date/clock time that the individual UOA-ID meets all of the eligibility criteria to be included into the population.*" The first definition attempts to define *start time* by reference to the terms *Type* and *CCT* and the *earliest CCT* whereas the second definition

Art Unit: 4143

actually defines the term *Cohort Time* and bases the *start time* as the last date/clock time (emphasis added). Thus, the definition of *start time* appears to be inconsistent and thereby renders it vague and indefinite. For purposes of examination of these claims, Examiner will assume that the start time is the earliest CCT in which a UOA-ID becomes a member of a specified group or population.

15. Claim 14 recites in the preamble a *method ... wherein an Output Expression is generated* and then goes on to state in a limitation the phrase *determining an Outcome*, but there are many outcomes and outcome expressions delineated in the claims and specification. Consequently, this claim is indefinite.

#### ***Double Patenting***

16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).
17. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. Effective January 1, 1994, a registered attorney or agent of record

may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. Claims 1–3 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claims 1–3, respectively, of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
19. Claims 4–8 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 5 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
20. Claims 10–15 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claims 5–10, respectively, of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
21. Claim 16 is provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 11 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
22. Claims 17 and 18 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claims 12 and 13, respectively, of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
23. Claims 19–25 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 15 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
24. Claims 26–30 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claims 16–20, respectively, of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
25. Claims 31 and 34 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 21 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.



26. Claims 32, 33 and 35 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 22 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
27. Claims 36–38 are provisionally rejected on the ground of nonstatutory double patenting over corresponding claim 23 of copending Application No. 10/693730. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
28. The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: the limitations of the instant claims (*e.g.*, 1 and 16) do not have terms corresponding to the CATVAR as described in the earlier, co-pending application. Examiner believes this term is superfluous and inherent in the application of the techniques described in the instant application. This term as disclosed in the earlier co-pending application merely is used to **parse** values into various cohort time segments and does not mean that a value is "divided" into another value in the mathematical sense. But this parsing of values is inherent in the limitations of the claims in instant application. Other claims correspond to 'intended use' of the invention and are also delineated, as indicated above, in the earlier, co-pending application. Thus, given the earlier, co-pending application, the claims in the instant application would be obvious. Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

#### ***Claim Rejections - 35 USC § 112***

29. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

30. Claims 4–8, 19–22 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The broad application of the method of claim 1 for use in *trademark applications, evaluating web pages on the Internet, effects of similar trademarks, and warranty applications*, etc. are vague and indefinite because these claims do not set forth any steps involved in the application of the method/process of claim 1 to the stated application area. It is unclear what method/process steps and what definitions of terms Applicant is intending to encompass in broadly stated application areas such as those described in the claims. Moreover, many of the terms are vague. For example, in claim 6, it is not clear what is meant by *evaluating web pages*. This could mean any number of things even within the context of parent claim 1. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced within the particular application domain claimed. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

***Claim Rejections - 35 USC § 101***

31. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

32. Claims 36–38 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional

interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions. Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and the Examiner therefore will treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. As written, the claims encompass a computer algorithm i.e. an abstract idea, which is non-statutory because it embodies a judicial exception. Replace the phrase *output expressions* with a **computer executable program tangibly embodied on a computer-readable medium** would overcome this rejection under 35 U.S.C. 101.

***Claim Rejections - 35 USC § 102***

33. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

34. Claims 36 and 38 are rejected under 35 U.S.C. 102(a) as being anticipated by McCartney (US 20030065534 A1).
35. **Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or

Art Unit: 4143

part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

36.

**Claim 36:**

McCartney, as shown, discloses and/or describes the following limitations:

- *An Output Expression comprising a representation showing EAV trends of a particular Population, said trends are expressed in Cohort time segments* (Applicant on page 17, line 14 states that *EAV may be, but are not limited to, a quantity count, dollar value, number of products, and number of events, etc.* hence, corresponds to a value of interest expressed in *Cohort time segments*. But a *cohort time segment* is the time segment a particular entity (unit of analysis) satisfies a given criterion. McCartney, in at least [0004] describes the burden of "track[ing] every resource that is used in respect of every patients by predetermined case types [ ] during the time that the patient is in the care of the health care provider." Thus, 'predetermined case types' associated with certain defined time periods corresponds to *cohort time segments* and the notion of tracking resources used is a form of *showing EAV trends*. Also, McCartney, in at least [0003] describes values and costs which correspond to *EAV* and describes trends which correspond to *cohort time trends*);

**Claim 38:**

McCartney, as shown, discloses and/or describes the following limitations:

- *An Output Expression comprising a representation showing EAV Net Value trends of a particular Population, said trends are expressed in Cohort time segments* (See the rejection of claim 36 above. McCartney also specifically refers to 'total' resource use. For example, in at least [0005]: "[R]esearch has indicated that while length of stay can be a useful indicator of total resource use, it can be a misleading indicator for

Art Unit: 4143

some case types and some resources." and in [0057] "total consumption information" and in [0063] "actual total statistical unit usage..." (emphasis added) and so forth.)

37. Claim 37 is rejected under 35 U.S.C. 102(b) as being anticipated by Wong (US 5976082 A).

**Claim 37:**

Wong, as shown, discloses and/or describes the following limitations:

- *a showing NNT trends of a particular Population, said trends are expressed in Cohort time segments* (Wong, in at least [0002] describes his invention in terms of "targeted interventions" relative to congestive heart failure patients and further describes "event level information" and prediction models (Wong [abstract]) and "...a time-line diagram..." (figure 6B) pertaining to a series of events, hence a "trend" associated with targeted interventions which corresponds to *NNT trends of a particular Population*. Note also in the abstract therein that Wong refers to a "time window" and in [0013] "time window adjustments" and thus correspond to *Cohort time segments*).

***Claim Rejections - 35 USC § 103***

38. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

39. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- a. Determining the scope and contents of the prior art.
- b. Ascertaining the differences between the prior art and the claims at issue.
- c. Resolving the level of ordinary skill in the pertinent art.
- d. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 4143

40. Claims 1–38 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCartney (PG-Pub 2003/0065534 A1), in view of Wong (US 5,976,082 A).

**Claims 1 and 34:**

McCartney, as shown, discloses and/or describes the following limitations:

- *A method of optimizing resource allocation* (McCartney [0002]: "...and allows for optimized allocation of health care resources.") *comprising the steps of:*
  - *identifying sets of information wherein each set of information includes*
    - a UOA-ID (Applicant on page 9, line 22: *...means the particular individual UOA entity involved in the study* and further provides examples on page 10, line 2 as *patients having a common diagnosis or condition...* McCartney [0039] also describes a Patient Group: "...for example all patients who had a simple appendectomy are in a Patient Group."),
    - a CCT (Applicant on page 9, line 17 refers to *calendar clock date/time*. McCartney [0003] refers to dynamic periods of time for given situations: "For example a person admitted to a hospital [ ] will generally require operating room time, recovery ward time..." (emphasis added) and further describes in [0004] patients that must be "tracked virtually on a real time basis" (emphasis added) ) *and a*
    - VAR Value (Applicant on page 10, line 21 defines VAR. McCartney, in at least [0064-5] also refers to various values associated with resource allocation decisions and modules that determine them: "generating the case cost profile rather than the adjusted values.");
  - *grouping each UOA-ID into an appropriate Type* (Applicant defines *Type* on page 10, line 8. McCartney in at least [0026] describes this same limitation: "the grouping systems in different countries generally use the same approach to grouping disease and treatment case types." Emphasis added.);

McCartney does not specifically include the following limitations, but Wong, as shown does.

Art Unit: 4143

- *identifying a Start Time* (Applicant defines the *start time* generally as the time at which group membership criteria are satisfied. Wong, in at least [0050] states: "First available date of enrollment (i.e., start of dataset or enrollment date) [ ] Date of first CHF diagnosis (ICD-9 code in any position)...");
- *forming at least one Cohort time segment based on the Start Time* (Wong, in at least the abstract states: "A time window is defined to provide a timeframe from which to judge whether events should be considered in subsequent processing..." where 'time window' is equivalent to a *Cohort time segment*.);
- *placing the UOA-ID into the appropriate time segment* (Wong in at least [0013] states: "...the time window is used to identify an analysis region..." and in [0017] "...using the **time window** and the set of variables, to generate an **analysis file**..." The method of 'using the time window' is thus equivalent to the limitation in that the set of variables is associated with the particular time window. This association corresponds to the relevant *UOA-ID* that is associated with *the appropriate time segment*);
- *calculating an eligibility score for each UOA-ID for each time segment* (Applicant refers to *eligibility score* on page 14, line 17 as corresponding to the time-frame in which a unit of analysis is available for study both 'prospectively and retrospectively' and further provides an example where the score is given in terms of months. Wong, in at least [0161] describes the use of analysis weights associated with time windows: "...analysis weights which reflect proximity to the event to be predicted can be used, for example, within 3 months  $\times$  1, 3-6 months  $\times$  0.75 ...");

McCartney, as shown, discloses and/or describes the following limitations:

- *calculating an Eligible Adjusted Variable Value* (McCartney, in at least [0064-5] states: "...to reconcile [ ] case costing data available [ ], resulting in adjusted cost ..." (emphasis added) where adjusted cost corresponds to *Adjusted Variable Value*.);
- and

Art Unit: 4143

- *generating an Output Expression* (McCartney, in at least [0171] states: “The output generated by applying the model is a file containing a list of all of the CHF patients ordered by an indicator representative of the likelihood that that patient will have an adverse health outcome (i.e., experience that defined by the dependent variable). This list can then be divided into subgroups such as in 5% or 10% increments of patients likely to have the adverse health outcome...” (emphasis added) wherein the various groups corresponds to *eligible* data entities.)

With respect to claim 34, Examiner takes **Official Notice** that it is old and well-known as well as commonplace in the technical and medical arts to utilize computer systems comprising a central processing unit along with system software to perform method or algorithmic steps or procedures in data intensive environments. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the resource allocation method of McCartney with Wong's recitation of time-dependent variables because each pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

**Claims 2 and 17:**

McCartney/Wong disclose the limitations as shown in the rejections of claims 1 and 16 above.

McCartney as shown, further discloses and/or describes the following limitations:

- *The method of claim 1 further comprising the step of transforming the Output Expressions from expressed in Cohort time segments...* (McCartney, in at least [0003], describes various types of *cohort time*: “They will generally require operating room **time**, recovery ward **time**...”)

McCartney does not specifically include the following limitations, but Wong, as shown does.



Art Unit: 4143

...to being expressed in CCT segments (Wong, in at least claim 1, states a step which includes: "converting data representing the extracted claims information and the defined events into files containing event level information". This conversion process is equivalent to a transformation of *cohort time segments* to *CCT segments* because CCT segments pertain to the times at which events occur. Moreover, in at least [0048] specifically states "the information is converted into an event level format." Finally, in [0051], Wong states: "Primary data file 2 is an events level file with a record for each event ordered by member and the chronological date of the event, in the present invention, presented in descending order of event date." (emphasis added).)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the statistical methods of McCartney and Wong because translating time periods associated with conditions to absolute or calendar time facilitates the ability of analysts to make meaningful assessments of resource utilization and discern trends in the data.

**Claims 3 and 18:**

McCartney/Wong disclose the limitations as shown in the rejections of claim 1 above and 16 below. McCartney/Wong do not specifically disclose *wherein said method is performed using a system comprising a central processing unit for implementing system software effective for performing the method*. However, Examiner takes **Official Notice** that it is old and well-known as well as commonplace in the technical and medical arts to utilize computer systems comprising a central processing unit along with system software to perform method or algorithmic steps or procedures in data intensive environments. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to utilize a central processing unit along with system software because their use enables the practical utility by increasing the efficiency and reliability of the resource allocation system.

Art Unit: 4143

**Claims 4–10 and 19–25, 35:**

McCartney/Wong disclose the limitations as shown in the rejections of claim 1 (above), 16 (below) and 34 (above). The limitations in these claims recite intended use and so are not given patentable weight.

**Claims 11 and 26:**

McCartney/Wong disclose and/or describe the limitations of claim 1 and 16 above. McCartney further discloses and/or describes the following limitations:

- *The method of claim 1 wherein an Output Expression is generated by the method comprising the step of calculating an EAV based on a summary metric for each UOA-ID per Type* (McCartney, in at least [0064-5] states: "...to reconcile [ ] case costing data available [ ], resulting in adjusted cost ..." (emphasis added) where adjusted cost corresponds to *Adjusted Variable Value*. McCartney, in at least [0070] states: "For each of the Patient Groups [... a column] [ ] that identifies the average length of stay (ALOS) associated per case per Patient Group." (emphasis added) where the 'average length...' corresponds to a *summary metric* for which a value is associated.)

**Claims 12 and 27:**

McCartney/Wong disclose and/or describe the limitations of claim 1 above and 16 below. Wong further discloses and/or describes the following limitations:

- *determining a DV per Type per time segment* (See Wong, in at least [0150]: "...this is a dichotomous variable..." (emphasis added) See also the rejection of claim 1 above and Examiner's **Official Notice** below);
- *calculating an EAV summary metric for all UOA-IDs per Type per time segment* (See the rejections of claim 11 above); *and*
- *calculating an EAV Net Value per Type per time segment* (See the rejections of claims 1 above. McCartney also specifically refers to 'total' resource use. For example, in at least [0005]: "[R]esearch has indicated that while length of stay can be a useful indicator of total resource use, it can be a misleading indicator for some case

types and some resources." and in [0057] "total consumption information" and in [0063] "actual total statistical unit usage..." (emphasis added) and thus corresponds to a Net Value per Type.)

McCartney/Wong do not specifically describe the limitations regarding a DV per time segment, but, 'DV', being a 'dichotomous variable' (see page 27, lines 15-17) is simply a Boolean value that is used to stratify the data. Examiner's takes **Official Notice** that it is well known and commonplace in the statistical analysis arts to employ the use of various types of stratified sampling techniques. These strata are, by definition, mutually exclusive. Applicant employs the term 'DV' to define two mutually exclusive sets of values depending on the context which, in Wong, also involves a time-based aspect (see Wong in at least [0150]: "Resources counted from time of cost..."). Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to use a Boolean technique for stratifying data in conjunction with the health care and disease management methods of McCartney and Wong because many types of data must be either included in an output analysis or excluded from it in order to make the analysis meaningful.

#### Claims 13 and 28:

McCartney/Wong disclose and/or describe the limitations of claims 1 above and 16 below.

McCartney/Wong, as shown, further discloses and/or describes the following limitations:

- *determining a RORA* (Wong, in at least [0150] wherein "resource utilization is measured in dollars." 'Resource utilization' is thus equivalent to *return on resource allocation*' (RORA));
- *determining an Outcome* (McCartney, in at least [0171] states: "The output generated by applying the model is a file [...]" (emphasis added) where the 'output generated' corresponds to *determining an Outcome*.);
- *calculating a NNT* (Wong, in at least [0002] describes his invention in terms of "targeted interventions" relative to congestive heart failure patients and thus requires the determination of the *number needed to target (NNT)*.)

Art Unit: 4143

- *calculating an EAV Net Value per Type per time segment* (See the rejection of claim 1 relative to the EAV calculation. Also, McCartney also specifically refers to 'total' resource use. For example, in at least [0005]: "[R]esearch has indicated that while length of stay can be a useful indicator of total resource use, it can be a misleading indicator for some case types and some resources." and in [0057] "total consumption information" and in [0063] "actual total statistical unit usage..." (emphasis added) and thus corresponds to a Net Value per Type.); and
- *calculating the maximum available RA per UOA-ID per time segment* (See the rejection of the limitation above regarding RORA. Note, that McCartney, in at least [0053], refers to "relative resource weightings" in which it is fairly implied that a weighting of 1 corresponds to the maximum weight, hence corresponds to the instant limitation.)

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the resource allocation method of McCartney with Wong's recitation of time-dependent variables because each pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

**Claims 14 and 29:**

McCartney/Wong disclose and/or describe the limitations of claim 1 above and 16 below.

McCartney/Wong, as shown, further discloses and/or describes the following limitations:

- *determining a RA* (See the rejection of claim 13. Note, that McCartney, in at least [0053], refers to "relative resource weightings" in which it is fairly implied that a weighting of 1 corresponds to the maximum weight, hence corresponds to the instant limitation.);
- *determining an Outcome* (McCartney, in at least [0171] states: "The output generated by applying the model is a file [...]" (emphasis added) where the 'output generated' corresponds to *determining an Outcome*.);

Art Unit: 4143

- *calculating a NNT* (Wong, in at least [0002] describes his invention in terms of "targeted interventions" relative to congestive heart failure patients and thus requires the determination of the *number needed to target (NNT)*.);
- *calculating an EAV Net Value per Type per time segment* (Also, McCartney also specifically refers to 'total' resource use. For example, in at least [0005]: "[R]esearch has indicated that while length of stay can be a useful indicator of total resource use, it can be a misleading indicator for some case types and some resources." and in [0057] "total consumption information" and in [0063] "actual total statistical unit usage..." (emphasis added) and thus corresponds to a *Net Value per Type*.); and
- *calculating the RORA per UOA-ID per time segment* (See the rejection of claim 8. Note that claim 13 refers to *determining a RORA* whereas here, this calculation is based on stratified data. However, other limitation in claim 13 effectively addresses this stratification).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the resource allocation method of McCartney with Wong's recitation of time-dependent variables because each pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

**Claims 15 and 30:**

McCartney/Wong disclose and/or describe the limitations of claim 1 and 16 above.

McCartney/Wong, as shown, discloses and/or describes the following limitations:

- *determining a RORA* (Wong, in at least [0150] wherein "resource utilization is measured in dollars." 'Resource utilization' is thus equivalent to *return on resource allocation*' (RORA));
- *determining a RA* (McCartney, in at least [0053], refers to "relative resource weightings" in which it is fairly implied that a weighting of 1 corresponds to the maximum weight, hence corresponds to the instant limitation.);

Art Unit: 4143

- *calculating a NNT* (Wong, in at least [0002] describes his invention in terms of "targeted interventions" relative to congestive heart failure patients and thus requires the determination of the *number needed to target (NNT)*.);
- *calculating an EAV Net Value per Type per time segment* (McCartney, in at least [0064-5] states: "...to reconcile [ ] case costing data available [ ], resulting in adjusted cost ..." (emphasis added) where adjusted cost corresponds to *Adjusted Variable Value*. Also, McCartney also specifically refers to 'total' resource use. For example, in at least [0005]: "[R]esearch has indicated that while length of stay can be a useful indicator of total resource use, it can be a misleading indicator for some case types and some resources." and in [0057] "total consumption information" and in [0063] "actual total statistical unit usage..." (emphasis added) and thus corresponds to a *Net Value per Type*.); and
- *calculating an O per UOA-ID per time segment* (McCartney, in at least [0171] states: "The output generated by applying the model is a file containing a list of all of the CHF patients ordered by an indicator representative of the likelihood that that patient will have an adverse health outcome (i.e., experience that defined by the dependent variable). This list can then be divided into subgroups such as in 5% or 10% increments of patients likely to have the adverse health outcome..." (emphasis added). Wong, in at least [0161] describes the use of analysis weights associated with time windows: "...analysis weights which reflect proximity to the event to be predicted can be used, for example, within 3 months  $\times$  1, 3-6 months  $\times$  0.75 ...").

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the methods of McCartney with the invention of Wong because they pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

**Claim 16:**

McCartney, as shown, discloses and/or describes the following limitations:

Art Unit: 4143

- *A method for optimizing resource allocation using a plurality of sets of information*  
(See the preamble to the rejection of claim 1. Note also that *plurality of sets* is equivalent to *identifying sets of information* as in claim 1), *the method comprising the steps of:*
- *for each set of information, identifying*
  - *an UOA-ID* (See the rejection of claim 1),
  - *a Type* (McCartney, in at least [0026] describes a “classification system” where elements of defined groups must meet certain criteria for inclusion in the relevant group.),
  - *a CCT* (See the rejection of claim 1) *and*
  - *a VAR Value* (See the rejection of claim 1);
- *grouping each UOA-ID into an appropriate Grouper* (McCartney in at least [0030] refers to examples of groups and subgroups of patients. In [0026] McCartney specifically refers to “grouping systems” and thus corresponds to a *Grouper*.);
- *identifying a Start Time* (See the rejection of claim 1);

McCartney does not specifically include the following limitations, but Wong, as shown does.

- *identifying a time segment duration* (Wong in at least [0167] refers to “length of stay”);
- *forming time segments based on the Start Time* (Wong in at least [0017] describes the acts of : “defining a time window for providing a timeframe” where ‘defining’ is equivalent to *forming*);
- *adjusting and standardizing each VAR Value to create AdjVAR Values* (See the rejection in claim 1 of the limitation component *VAR Value* that specifically mentions “adjusted values”);

McCartney, as shown, discloses and/or describes the following limitations:

- *placing each AdjVAR Value into the appropriate time segment* (McCartney in at least [0009] states: “a health care resource profiling system that includes a [ ] database [ ] quantifying a total use of a health care resource [ ] during a predefined time period...”

Art Unit: 4143

where the notion of 'predefined' circumscribes time segments, and *ipso facto* an appropriate time segment.);

- *calculating an eligibility score for each UOA-ID* (See the rejection of claim 1); and
- *generating an Output Expression* (See the rejection of claim 1).

Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the resource allocation method of McCartney with Wong's recitation of time-dependent variables because each pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

**Claims 31, 32 and 33:**

McCartney, as shown, discloses and/or describes the following limitations:

- *identifying sets of information wherein each set of information includes*
  - *an UOA-ID* (Applicant on page 9, line 22: *...means the particular individual UOA entity involved in the study* and further provides examples on page 10, line 2 as *patients having a common diagnosis or condition...* McCartney [0039] also describes a Patient Group: "...for example all patients who had a simple appendectomy are in a Patient Group."),
  - *a CCT* (Applicant on page 9, line 17 refers to *calendar clock date/time*. McCartney [0003] refers to dynamic periods of time for given situations: "For example a person admitted to a hospital [ ] will generally require operating room time, recovery ward time..." (emphasis added) and further describes in [0004] patients that must be "tracked virtually on a real time basis"), and
  - *a VAR Value* (Applicant on page 10, line 21 defines VAR. McCartney, in at least [0064-5] also refers to various values associated with resource allocation decisions and modules that determine them: "generating the case cost profile rather than the adjusted values.");



Art Unit: 4143

- *grouping each UOA-ID into an appropriate Type* (Applicant defines *Type* on page 10, line 8. McCartney in at least [0026] describes this same limitation: "the grouping systems in different countries generally use the same approach to grouping disease and treatment case types." Emphasis added.);

McCartney does not specifically include the following limitations, but Wong, as shown does.

- *identifying a Start Time* (Applicant defines the *start time* generally as the time at which group membership criteria are satisfied. Wong, in at least [0050] states: "First available date of enrollment (i.e., start of dataset or enrollment date) [ ] Date of first CHF diagnosis (ICD-9 code in any position)...");
- *forming at least one Cohort Time segment based on the Start Time* (Wong, in at least the abstract states: "A time window is defined to provide a timeframe from which to judge whether events should be considered in subsequent processing..." where 'time window' is equivalent to a *Cohort time segment*.);

McCartney, as shown, discloses and/or describes the following limitations:

- *placing the VAR Value into the appropriate time segment* (McCartney in at least [0009] states: "a health care resource profiling system that includes a [ ] database [ ] quantifying a total use of a health care resource [ ] during a predefined time period..." where the notion of 'predefined' circumscribes time segments, and *ipso facto* an appropriate time segment.);

McCartney does not specifically include the following limitations, but Wong, as shown does.

- *calculating an eligibility score for each UOA-ID for each time segment* (Applicant refers to *eligibility score* on page 14, line 17 as corresponding to the time-frame in which a unit of analysis is available for study both 'prospectively and retrospectively' and further provides an example where the score is given in terms of months. Wong, in at least [0161] describes the use of analysis weights associated with time windows: "...analysis weights which reflect proximity to the event to be predicted can be used, for example, within 3 months  $\times$  1, 3-6 months  $\times$  0.75 ...");

Art Unit: 4143

McCartney, as shown, discloses and/or describes the following limitations:

- *calculating an Eligible Adjusted Variable Value* (McCartney, in at least [0064-5] states: "...to reconcile [ ] case costing data available [ ], resulting in adjusted cost ..." (emphasis added) where adjusted cost corresponds to *Adjusted Variable Value.*);
- *and generating Output Expression* (McCartney, in at least [0171] states: "The output generated by applying the model is a file containing a list of all of the CHF patients ordered by an indicator representative of the likelihood that that patient will have an adverse health outcome (i.e., experience that defined by the dependent variable).

The last limitations in each of these claims recite intended use and so are not given patentable weight. Therefore, it would have been obvious to one with ordinary skill in the art at the time of the invention to combine the resource allocation method of McCartney with Wong's recitation of time-dependent variables because each pertain to the statistical analysis of health care systems and disease management issues and seek to identify ways to improve the efficiency of healthcare delivery systems.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wilson, Thomas W. "Evaluating ROI in State Disease Management Programs", *State Coverage Initiatives*, Vol. IV, No. 5 November 2003.
- Rohrer, J.E. "Duration of heart disease visits by elderly patients: productivity versus quality", *Health Services Management Research*, August 2002, page 141-146.
- <http://www.phiinstitute.org/evaluation.html>.
- Lynch, John W. et al. "Childhood and adult socioeconomic status as predictors of mortality in Finland", *The Lancet*, February 26, 1994, page 524.

Art Unit: 4143

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to Dr. **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **James A. Reagan** whose telephone number is **571.272.6710** may be contacted.

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Examiner, Art Unit 4143 15 February 2008

/James A. Reagan/Supervisory Patent Examiner, Art Unit 4143